



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/632,666

08/01/2003

Yu-Fei Ma

MSI-1601US

3552

22801

7590

07/18/2007

LEE & HAYES PLLC

421 W RIVERSIDE AVENUE SUITE 500

SPOKANE, WA 99201

EXAMINER

WONG, ALLEN C

ART UNIT

PAPER NUMBER

2621

MAIL DATE

DELIVERY MODE

07/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/632,666	<b>Applicant(s)</b> MA ET AL.	
	<b>Examiner</b> Allen Wong	<b>Art Unit</b> 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-14, 16, 18-22, 24, 25 and 27-33 is/are rejected.
- 7) ☒ Claim(s) 5-7, 15, 17, 23 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 4/24/07 have been fully read and considered but they are not persuasive.

The claim objection to claim 1 is withdrawn since the term "ER" is elaborated.

The 35 U.S.C. 101 rejection to claims 11-33 is withdrawn since the amendment to the claims meet today's 35 U.S.C. 101 statutory standards.

Regarding line 19 on page 15 to line 2 on page 16 of applicant's remarks, applicant asserts that Adiletta does not disclose "converting video frames into a sequence of energy redistribution measurements". The examiner respectfully disagrees. In column 13, line 9 to column 14, line 9, Adiletta discloses the obtaining of energy measurements of I, P and B frames from a group of pictures (GOP) for ascertaining the redistribution of energy measurements (ie. DC and AC components) from the sequence of frames data, and that element 68 of figure 6B converts the video frame data into energy spectrum information. Thus, Adiletta reasonably meets the broad claim limitations, and discloses converting video frames into a sequence of energy redistribution measurements.

Regarding line 24 on page 16 to line 5 on page 17 of applicant's remarks, applicant states that Adiletta does not disclose "applying one or more motion filters to the ER measurements to generate a number of temporal sequences of motion patterns, the motion patterns being in a spatio-temporal data format, the number being a function of how many motion filters were applied to the ER measurements". The examiner

respectfully disagrees. In figures 7-8, Adiletta discloses the motion patterns are captured where motion patterns or visual types are obtained, where the frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge or smoothness, in that the spatial motion and temporal data of the group of images is meticulously obtained and examined to yield patterns as illustrated in the graph on figure 7.

Adiletta's figure 7 shows a graph that can indicate plural patterns depending on the amount or variety of image data ascertained from a sequence of frames since frames from a group of frames can vary on a frame-by-frame basis. Thus, Adiletta reasonably meets the broad limitations of the claim, and discloses "applying one or more motion filters to the ER measurements to generate a number of temporal sequences of motion patterns, the motion patterns being in a spatio-temporal data format, the number being a function of how many motion filters were applied to the ER measurements."

Regarding lines 7-11 on page 18, and lines 1-3 and 8-14 on page 19 of applicant remarks, applicant contends that Adiletta does not disclose "applying one or more motion filters to the ER measurements to generate a number of temporal sequences of motion patterns, the motion patterns being in a spatio-temporal data format, the number being a function of how many motion filters were applied to the ER measurements".

The examiner respectfully disagrees. In figures 7-8, Adiletta discloses the motion patterns are captured where motion patterns or visual types are obtained, where the frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge or smoothness, in that the spatial motion and temporal data of the group of images is meticulously obtained and examined to yield patterns as illustrated in the graph on

figure 7. Adiletta's figure 7 shows a graph that can indicate plural patterns depending on the amount or variety of image data ascertained from a sequence of frames since frames from a group of frames can vary on a frame-by-frame basis. Thus, Adiletta reasonably meets the broad limitations of the claim, and discloses "applying one or more motion filters to the ER measurements to generate a number of temporal sequences of motion patterns, the motion patterns being in a spatio-temporal data format, the number being a function of how many motion filters were applied to the ER measurements."

Independent claim 1 is rejected for reasons as stated above. Claims 13 and 30 are rejected for similar reasons as above for claim 1. Dependent claims 2, 4, 8-12, 14, 18-21, 32 and 33 are rejected for at least similar reasons as stated above based on their respective dependencies.

Regarding lines 4-5 on page 21 of applicant remarks, applicant states that the examiner did not examine the features of claim 22. The examiner respectfully disagrees. See the previous Office Action and the rejection below.

Regarding lines 9-12 on page 21 of applicant's remarks, applicant argues that the particular phrase "motion vector fields" cannot be examined in a vacuum but must be examined in the context of the claim 22. The examiner respectfully disagrees. Claim 22 is rejected as carefully as possible based on current time constraints. Also, the combination of the references of Adiletta and Viscito must be viewed as a whole, not as individual, separate teachings. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary

Art Unit: 2621

reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Adiletta does not specifically disclose "motion vector fields" and deriving motion vector fields. However, in column 16, lines 3-17, Viscito discloses the use of motion vector field for temporal analysis. Thus, Viscito teaches the derivation of motion vector fields. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Adiletta and Viscito, as a whole, for accurately, efficiently encoding image data while maintaining high image quality so as to produce clear superb images on display for viewing, as disclosed in Viscito's column 2, lines 60-63.

Dependent claims 24, 25 and 27-29 are rejected for at least similar reasons as claim 23.

Regarding lines 1-4 and 15-17 on page 22 of applicant's remarks, applicant states that Adiletta does not disclose "converting video frames into a sequence of energy redistribution measurements". The examiner respectfully disagrees. In column 13, line 9 to column 14, line 9, Adiletta discloses the obtaining of energy measurements of I, P and B frames from a group of pictures (GOP) for ascertaining the redistribution of energy measurements (ie. DC and AC components) from the sequence of frames data, and that element 68 of figure 6B converts the video frame data into energy spectrum information. Thus, Adiletta reasonably meets the broad claim limitations, and discloses converting video frames into a sequence of energy redistribution measurements.

Regarding lines 7-9 and 18-21 on page 22 of applicant's remarks, applicant mentions that neither Adiletta nor Viscito disclose "applying one or more motion filters to the ER measurements to generate a number of temporal sequences of motion patterns, the motion patterns being in a spatio-temporal data format, the number being a function of how many motion filters were applied to the ER measurements". The examiner respectfully disagrees. In figures 7-8, Adiletta discloses the motion patterns are captured where motion patterns or visual types are obtained, where the frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge or smoothness, in that the spatial motion and temporal data of the group of images is meticulously obtained and examined to yield patterns as illustrated in the graph on figure 7. Adiletta's figure 7 shows a graph that can indicate plural patterns depending on the

Art Unit: 2621

amount or variety of image data ascertained from a sequence of frames since frames from a group of frames can vary on a frame-by-frame basis. Thus, Adiletta reasonably meets the broad limitations of the claim, and discloses "applying one or more motion filters to the ER measurements to generate a number of temporal sequences of motion patterns, the motion patterns being in a spatio-temporal data format, the number being a function of how many motion filters were applied to the ER measurements."

After careful consideration, claims 5-7, 15, 17, 23 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Thus, the rejection is maintained.

### ***Claim Objections***

1. Claim 21 is objected to because of the following informalities: After amendment on 4/24/07, claim 21 should be changed to be consistent with amended claim 13 in that "a computer-program medium as recited in claim 13" should be changed to "the computer readable medium as recited in claim 13". Doing so would avoid potential antecedent basis issues. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.



3. Claims 1, 2, 4, 8-14, 18-21, 30, 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Adiletta (6,101,276).

Regarding claims 1 and 30, Adiletta discloses a computing device and a method for representing sequential motion patterns, the method comprising:

converting video frames into a sequence of energy redistribution measurements (fig.6B, element 68; col.13, ln.9 to col.14, ln.9, Adiletta discloses the obtaining of energy measurements of I, P and B frames from a group of pictures (GOP)); and

applying one or more motion filters to the ER measurements to generate a number of temporal sequences of motion patterns, the motion patterns being in a spatio-temporal data format, the number being a function of how many motion filters were applied to the ER measurements (fig.7-8, Adiletta discloses the motion patterns are captured where motion patterns or visual types are obtained, where the frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge or smoothness).

Note claims 2, 4, 8-14, 18-21, 30, 32 and 33 have similar corresponding elements.

Regarding claim 13, Adiletta discloses a computer-readable medium comprising computer-program instructions for representing sequential motion patterns, the computer-program instructions being executable by a processor, the computer-program instructions comprising instructions for:

generating one or more motion filters according to respective ones of primary motions in a video sequence, each of the motion filters being responsive to a particular

Art Unit: 2621

one dominant motion of the primary motions (fig.7-8, Adiletta discloses the motion patterns are captured where motion patterns or visual types are obtained, where the frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge or smoothness);

calculating energy redistribution measurements between respective frames of the video sequence, the respective frames being determined by a sliding window of video frames of the video sequence (fig.6B, element 68; col.13, ln.9 to col.14, ln.9, Adiletta discloses the obtaining of energy measurements of I, P and B frames from a group of pictures (GOP));

converting the energy redistribution measurements into temporal sequences showing distinct motion patterns, each temporal sequence being generated responsive to application of a particular one of the motion filters to the energy redistribution measurements (fig.6B, element 68 produces output of motion statistics where there are distinct motion patterns in that fig.7-8, Adiletta discloses the motion patterns or visual types are captured, where the frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge or smoothness); and

wherein the temporal sequences represent high-level spatio-temporal motion patterns of the video sequence (col.22, ln.49-62).

Note claims 14 and 18-21 have similar corresponding elements.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2621

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 16, 22, 24, 25, 27-29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adiletta (6,101,276) in view of Viscito (6,782,135).

Regarding claim 22, Adiletta discloses a computing device comprising a processor; and a computer readable-medium coupled to the processor, the computer-readable-medium being encoded with at least one computer program including computer-executable instructions that when executed by the processor perform operations for:

representing an energy distribution between a particular block in a first frame of the frames and a different block in a second frame of the frames that is adjacent to the first frame (fig.6B, element 68; col.13, ln.9 to col.14, ln.9, Adiletta discloses the obtaining of energy measurements of I, P and B frames from a group of pictures (GOP));

modifying content of the sliding window to include a new frame of the frames (fig.3, note the use of the recursive rate control quantization scheme where the use of a buffer to send a feedback to the quantization unit for cyclically updating the quantization parameter to modify the frames data content);

responsive to modifying the content, updating, the represented energy distributions for each block, the updating being based on an overlap portion of the block and a previous block of a previous frame of the frames (fig.6B, element 68 produces output of motion statistics where there are distinct motion patterns in that

Art Unit: 2621

fig.7-8, Adiletta discloses the motion patterns or visual types are captured, where the frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge or smoothness); and

motion filtering the energy distributions to sequentially represent one or more motion types presented by the video sequence over time, the one or more motion types identifying one or more sequential motion patterns of the video sequence (fig.7-8, Adiletta discloses the motion patterns are captured where motion patterns or visual types are obtained, where the frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge or smoothness).

Adiletta does not specifically disclose the term "motion vector fields" and deriving motion vector fields. However, Viscito teaches the derivation of motion vector fields (col.16, ln.3-17; Viscito discloses the use of motion vector field for temporal analysis). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Adiletta and Viscito, as a whole, for accurately, efficiently encoding image data while maintaining high image quality so as to produce clear superb images on display for viewing (Viscito col.2, ln.60-63).

Note claims 3, 16, 24, 25, 27-29 and 31 have similar corresponding elements.

***Allowable Subject Matter***

1. Claims 5-7, 15, 17, 23 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

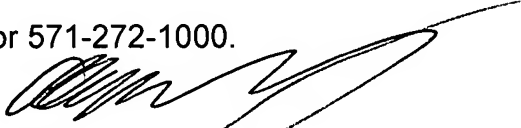
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 2621

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Allen Wong  
Primary Examiner  
Art Unit 2621

AW  
7/9/07